

# **PROBLEMS OF TAX INCENTIVE ON RESEARCH AND TECHNOLOGY DEVELOPMENT: COMPARISON WITH MALAYSIA AND SINGAPORE**

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## **ABSTRACT**

We cannot refuse that the growth of this current world is based on technology and innovation. Governments in many countries use different measures for stimulating Research and Development (R&D) activities among private entities. One of the most effective measures used is granting tax incentives. Since other countries are searching for the way to add value to its product and service by improving technology and innovation, Thailand cannot avoid going through the same path with those countries. In Thailand, there are some measures that have been enforced to promote R&D, such as the exemption of income equal to the amount spent for R&D activities under Royal Decree issued under the Revenue Code regarding reduction and exemption from revenue taxes (No. 297) B.E. 2539 (The Royal Decree No.297). Under this measure, companies can spend money on hiring a registered R&D service provider to conduct R&D on their behalf in order to qualify for the exemption. In practice, if a company or R&D Unit would like to become a R&D service provider, they have to file an application to Ministry of Finance (MOF) through the Revenue Department. If a company hires the approved R&D service provider, they will be entitled to the exemption, while those registered R&D service provider will only gain more business.

Since the R&D tax incentive program was implemented in Thailand in 1996, there are questions concerning proper implementation of this measure, and whether or not the Thai R&D tax incentive scheme really stimulates R&D investment in the country. Questions also arise whether the 200 per cent of tax allowance was enough to effectively encourage private sectors to invest in R&D. Even though Thailand has recently enacted the Royal

Decree issued under the Revenue Code regarding reduction and exemption from revenue taxes (No. 598) B.E. 2559 (The Royal Decree No.598) for the expenditures paid on research and development of technology and innovation in February 2016, considerations must still be taken on the appropriateness of this Royal Decree towards the promotion of R&D, and whether such new tax scheme would encourage private entities to invest in R&D. It is also important to consider whether such investment would be sufficient to solve the current R&D issues in Thailand.

This thesis aims to expand on the understanding of Thailand's current R&D tax policy, compared to other countries, as well as providing recommendations on how to promote R&D activities or R&D investments in the private sector more effectively.

**Keywords:** Tax Incentive, R&D, Royal decree No.297, Royal Decree No.598

#### บทคัดย่อ

เราไม่สามารถปฏิเสธได้ว่าความก้าวหน้าของโลกในยุคปัจจุบันนั้นเกิดขึ้นบนพื้นฐานของเทคโนโลยีและนวัตกรรม รัฐบาลในหลายประเทศใช้มาตรการที่แตกต่างกันในการกระตุ้นการวิจัยและพัฒนา (R&D) ในภาคเอกชน หนึ่งในมาตรการที่มีประสิทธิภาพมากที่สุดคือการให้สิทธิประโยชน์ทางภาษี ในขณะที่ประเทศต่างๆ กำลังมองหาวิธีที่จะเพิ่มมูลค่าให้กับผลิตภัณฑ์และบริการของตนโดยการพัฒนาเทคโนโลยีและนวัตกรรม ประเทศไทยก็ยังไม่สามารถที่จะหลีกเลี่ยงไม่เดินไปในแนวทางนี้ได้เช่นกัน ในประเทศไทย รัฐได้มีการออกมาตรการทางภาษีเพื่อส่งเสริมการวิจัยและพัฒนาเช่นการได้รับการยกเว้นภาษีเงินได้นิติบุคคลจากรายได้เท่ากับจำนวนเงินที่ใช้สำหรับกิจกรรมเพื่อการวิจัยและพัฒนาตามพระราชกฤษฎีกาออกตามความในประมวลรัษฎากรว่าด้วยการยกเว้นรัษฎากร (ฉบับที่ 297) พ.ศ. 2539 (พระราชกฤษฎีกา ฉบับที่ 297) ภายใต้พระราชกฤษฎีกาฉบับนี้ บริษัทสามารถนำค่าใช้จ่ายที่ได้จ่ายไปเป็นค่าใช้จ่ายให้แก่หน่วยงานที่ขึ้นทะเบียนเป็นผู้รับทำการวิจัยและพัฒนาแล้ว มาขอใช้สิทธิประโยชน์ทางภาษีได้ สำหรับหน่วยงานรัฐหรือเอกชนใดที่ต้องการที่จะเป็นผู้รับทำการวิจัยและพัฒนาเทคโนโลยีดังกล่าว ต้องยื่นคำขอต่อกรมสรรพากรเพื่อพิจารณาเสนอรัฐมนตรีว่าการกระทรวงการคลัง หากบริษัท

ผู้ว่าจ้างได้ว่าจ้างผู้รับทำวิจัยและพัฒนาที่ได้รับการรับรองแล้วก็จะมีสิทธิที่จะได้รับการยกเว้นภาษีดังกล่าวได้ ในขณะที่หากทางด้านผู้รับทำวิจัยก็จะได้รับผลประโยชน์ทางธุรกิจมากขึ้นด้วย ตั้งแต่ประเทศไทยได้นำเอามาตรการทางภาษีเพื่อส่งเสริมการวิจัยและพัฒนามาใช้ในปี พ.ศ. 2539 ก็มีการตั้งคำถามเกี่ยวกับความเหมาะสมของการใช้มาตรการนี้ และยังไม่มีความแน่ชัดว่ามาตรการทางภาษีเพื่อส่งเสริมการวิจัยและพัฒนาดังกล่าวได้ช่วยกระตุ้นให้เกิดการลงทุนทำวิจัยและพัฒนาในประเทศไทยได้จริงหรือไม่ นอกจากนี้ยังมีคำถามเกี่ยวกับ มาตรการยกเว้นภาษี 200% นี้ ว่าเพียงพอที่จะช่วยสนับสนุนให้ภาคเอกชนมาลงทุนทำวิจัยและพัฒนา ได้มีประสิทธิภาพมากน้อยเพียงใด

แม้ว่า เมื่อไม่นานมานี้ ประเทศไทยได้มีการตราพระราชกฤษฎีกาออกตามความในประมวลรัษฎากรออกตามความในประมวลรัษฎากรว่าด้วยการยกเว้นรัษฎากร (ฉบับที่ 598) พ.ศ. 2559 (พระราชกฤษฎีกา ฉบับที่ 598) สำหรับค่าใช้จ่ายที่จ่ายในการวิจัยและพัฒนาเทคโนโลยีและนวัตกรรมในเดือนกุมภาพันธ์ ปี พ.ศ. 2559 เรายังคงต้องวิเคราะห์ต่อไปถึงความเหมาะสมของพระราชกฤษฎีกานี้ต่อการส่งเสริมการวิจัยและพัฒนา และมาตรการส่งเสริมการวิจัยและพัฒนาตามพระราชกฤษฎีกาฉบับใหม่นี้ จะมีผลต่อการจูงใจภาคเอกชนเพื่อมาลงทุนทำวิจัยและพัฒนา มากน้อยเพียงใด และยังคงต้องพิจารณาอย่างให้ความสำคัญต่อไปว่าพระราชกฤษฎีกาฉบับนี้เพียงพอที่จะแก้ปัญหาการลงทุนทำวิจัยและพัฒนาในประเทศไทยในปัจจุบันได้หรือไม่

วิทยานิพนธ์ฉบับนี้ผู้จัดทำมีวัตถุประสงค์เพื่อขยายความเข้าใจในมาตรการทางภาษีเกี่ยวกับการวิจัยและพัฒนาของประเทศไทยในปัจจุบันเมื่อเทียบกับประเทศอื่นๆ นอกจากนี้ยังมีการให้คำแนะนำเกี่ยวกับวิธีการส่งเสริมกิจกรรมวิจัยและพัฒนาหรือการลงทุนวิจัยและพัฒนาในภาคเอกชนอย่างมีประสิทธิภาพ

**คำสำคัญ:** มาตรการทางภาษี, การวิจัยและพัฒนา, พระราชกฤษฎีกา ฉบับที่ 297, พระราชกฤษฎีกา ฉบับที่ 598

## Introduction

Due to increasing intensity of domestic and international competition in global free trade, research and development of products and manufacturing processes are vital to the continued expansion of Thailand's economy that may lead to the creation of long-term competitive advantage for the country. Since Thailand has been losing its competitive advantage in labor costs, which are now higher than neighboring countries, and most natural resources are limited, it is essential that the country will have to restructure its basic industrial structure from traditional use of labor to a more sophisticated utilization of research and development activities.<sup>1</sup>

In terms of research and development expenditure, Thailand lags behind a number of middle-income countries and behind the now high-income countries. Comparing the investment on research and development in Thailand in 2014, it is found that investment in research and development (R&D) has been stable over the past decade. Thailand has spent very little on R&D, totaling only 0.39 percent of gross domestic product (GDP), which is lower than many countries in Asia such as South Korea, China, and Japan, whose R&D spending was around 4.15, 2.01 and 3.4 percent respectively. In comparison with Thailand's neighboring countries in ASEAN<sup>2</sup>, Singapore and Malaysia invest 2.15% and 1.13% of its GDP on R&D.<sup>3</sup> In terms of developers and researchers<sup>4</sup>, there are very few R&D personnel at only 9.3 out of 10,000 people comparing to other developed countries in Asia such as China at 19.3 out of 10,000

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<sup>1</sup> National Science and Technology Development Agency, R&D Project Approval for Income Tax exemption for expenses paid out as R&D expenditures;; See <http://www.nstda.or.th/rdc/index.php/aboutrdp>, September 9, 2015

<sup>2</sup> World Bank, "World Development Indicators", See: <http://data.worldbank.org/data-catalog/world-development-indicators>, accessed on May 16, 2016

<sup>3</sup> Data for Thailand are for 2011, Data for the Republic of Korea and the People's Republic of China are for 2013; data for and Singapore and Malaysia are for 2012.

<sup>4</sup> UNESCO Institute for Statistics, Data Centre, See: <http://www.uis.unesco.org/datacentre/pages/default.aspx>, accessed on May 16, 2016.

people, Malaysia at 42.1, Singapore 116.8 and South Korea at 128.1, which are over ten times more than Thailand.<sup>5</sup> So, it is not surprising why Thailand has lost its ability to compete against other countries. Thus the urgent need for the state to promote more R&D activities and to encourage the private sector to overcome its weakness in knowledge-based infrastructure.

## **Backgrounds and Problems**

Tax incentive is where the government uses tax to stimulate or to change people's behavior for a certain purpose. R&D stands for Research and Development. When a company invest in something, they expect something in return, such as the development or improvement of products. The problem companies often face for doing research is that the results are not guaranteed. Businesses spend millions of baht to improve existing systems, some may fail, while others may work. Yet the outcome may not be marketable due to the high cost of research. Thus, to obtain certain know-hows, many companies opt towards a shortcut by asking someone else to conduct the research on their part and paying them a royalty fee. The purchase of technology may allow a company to grow to a certain level, but the company may never learn to develop the technology by itself and may have to keep paying the royalty fee, which may be more and more expensive every day. So in many countries, tax measures are applied to stimulate R&D activities among private entities through the offering of tax benefits.

There are several methods to encourage more research and development, but the most interesting and effective mean for encouraging the private sector to invest in R&D is creating tax incentives towards research and development activities by offering additional tax deduction of the expenditure paid towards research and development activities. In order to promote and encourage the private sector to invest in research and development of technology in

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<sup>5</sup> Data refer to full-time equivalent number of researchers from various fields. Data for Thailand are for 2011; for Republic of Korea, and for the People's Republic of China 2013; data for Singapore and Malaysia are for 2012.

Thailand, the government issued the Royal Decree No. 297 (1996) to provide income tax exemption for the income of the company or partnership amount to 100% of the expenses paid out as an expenditure incurred on research and development activities. However, statistics show that the growth of Thailand R&D activities has been lower than it should be, with a small number of companies adopting this measure for the proposed benefits. Most of these companies are large companies with enough money to be set aside for such big investments. The Tax incentive in place since 1996 for companies with R&D projects are not very attracting and have had limited results so far. Having considered the current R&D definition as defined by The Notifications of MOF No.3, which is not clearly understandable and not applicable for Thailand's industrial or commercial activities, in addition to the content of the Royal Decree No.297 concerning a 200 per cent of tax allowance, the incentive is not enough to encourage private sectors to invest in R&D. It is also not suitable for uplifting Thailand's current R&D capabilities. This tax scheme does not offer enough benefits to encourage start-up companies, which have insufficient budget for operating its business, let alone conducting R&D activities. In the case of a loss-incurring situation, if the R&D expenditures are more than the net income received in the same year, the exempted amount of R&D expenses cannot be deducted to an amount exceeding the gross amount of income.

Although Thailand has already issued the Royal Decree under the Revenue Code regarding reduction and exemption from revenue taxes (No. 598) B.E. 2559 (The Royal Decree No.598) to increase the rights and privileges of companies or juristic partnerships in relation to expenses incurred in connection with research and development innovation in February 24, 2016, the new R&D tax scheme under The Royal Decree No.598 does not meet the private sector's demand concerning R&D activities, and thus, is insufficient to solve current R&D issues in Thailand.

## The Definition of R&D

The most authoritative definition of Research and Development (R&D) comes from Organization for Economic Co-operation and Development (OECD) Frascati Manual. The Frascati Manual is not only a standard for R&D data collection in the OECD member countries, but a result of initiatives by the OECD, UNESCO, the European Union and various regional organizations.<sup>6</sup> Today, the guidelines of the Frascati Manual have become de facto standard for both for collecting and analyzing R&D activities across the globe.

The latest definition of R&D proposed by the Frascati is as follow:

**“Research and experimental development (R&D) comprise creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications”<sup>7</sup>**

### Definition of R&D in Thailand

Tax incentives are given to R&D activities under section 3 of Royal Decree No. 297. The Research and Development definition is stated as such in The Notifications of MOF No.3. There are two types of R&D identified in clause 4: Basic Industrial Research and Applied Research. After having considered the definition, Thailand has opted to apply the definition of R&D from the General Agreement on Tariffs and Trade Agreement on Subsidies and Countervailing

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<sup>6</sup> OECD (2015), *“Frascati Manual 2015: Guidelines for Collecting and Reporting Data on Research and Experimental Development”*, **The Measurement of Scientific, Technological and Innovation Activities**, OECD Publishing, Paris, 4 (2015)

<sup>7</sup> OECD (2002), *“Frascati Manual 2002: Proposed Standard Practice for Surveys on Research and Experimental Development”*, **the measurement of scientific and technological activities**, OECD Publications, 31, (6th edition, 2002)

Measure (GATT).<sup>8</sup> Thus, the definition of R&D as stated is too general, lacks clarity and cannot be applicable for Thai industrial or commercial activities<sup>9</sup>. Since the Royal Decree No.598 was issued, the Notification of MOF on Income Tax No. 391 by virtue of Section 4 of the Decree under the Revenue Code Regarding the Tax Exemption No. 598 has amended the previous definition and provides an additional definition of “Innovation” to encourage private sectors to invest, and create new innovation in order to develop the capability of R&D in Thailand<sup>10</sup>.

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<sup>8</sup> See “*Agreement on subsidies and countervailing Measure*”, part iv, article 8.2A in **GATT** (1994, p. 237).

<sup>9</sup> Dr. Somkiat Tangkitvanich, Interview by Nattha Komolvadhin, Kid yok kum lung 2, the Thai, August 23, 2013.

<sup>10</sup> The definition of R&D defined by The Notification of MOF No.391 are defined as follow:

a. **The Research and Development work** is creative by nature, and is conducted under systematic procedures with the goal of product development or development of new production process; the Research and Development work involved is innovative and is different from that of other activities, involving the application of science and technology to solve various problems. The different types of Research and Development work are as follow:

i. **Basic Research** – a theoretical study or research in a laboratory in search for new knowledge without the development of a product or service

ii. **Applied Research** – a study in search of new knowledge with the purpose or goal of applying the results obtained from the research into practice or to seek new alternatives to obtain the desired goal

iii. **Experimental Development Research** – a systematic study utilizing known knowledge and information to create new resources, tools, products, processes, systems, or services, or to develop and improve on existing processes; however, experimental development research does not include natural changes or changes that typically occur during the product life cycle, or the life cycle of concurring production process, service, or business procedure, even if such changes may result in development progress

b. **Innovation** involves applying scientific knowledge and technology to create new, innovative product or process, which can be classified into various types of innovation as such:

i. **Product Innovation** – applying to good use new product and service, or product and service that has been highly improved; this type of innovation includes any clearly visible changes and improvements on physical and technical properties, on compositions, materials used, including software that are user-friendly, easily applicable to various usage.

ii. **Process Innovation** – involves clearly improved production process or distribution process, including technical changes, changes in equipment or software used.



Notification of MOF No. 391 provides a clearer and more comprehensive definition of R&D. The definition of ‘basic research’ remains almost the same as the existing definition (Notification of MOF No. 3). A new definition has been given to ‘applied research’, where the research is categorized into two types - applied research, and experimental development research. Furthermore, the previous condition stating that “R&D project cannot be modified or applied for industrial or commercial purposes” has been removed. However, there are still some issues that have not yet been resolved. Although the definition has become clearer and more understandable, it is broad and does not provide the details of what characteristics are to be included or excluded in R&D, and hence, lacking a clear guideline for applicants on what type of activities would qualify for the proposed R&D tax incentives

## **Methods of R&D Promotion**

Incentives applied to stimulate R&D and innovation activities can generally be divided in two main methods: 1) delivered directly to business in the form of grants, subsidies, loans or contracts, and 2) delivered indirectly through tax incentives. Incentives are an important and effective tool to be used as an economic stimulus as they reduce certain costs of R&D and innovation activities. An increasing number of OECD countries are also using tax incentives to spur R&D and innovation as they recognize the fact that these incentives are key to enhancing productivity and performance<sup>11</sup>.

## **Types of R&D Tax Incentives**

Each country adopts different kinds of tax incentives to encourage R&D activities of companies.<sup>12</sup> These include:

- i. Tax allowances, or enhanced allowances, or extra amounts over current business expenses: deducted from

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<sup>11</sup> OECD, “Tax Incentive for research and Development Trend And Issues”, Science Technology Industry, 2

<sup>12</sup> Tanja Tanayama, “*Overview of R&D Tax Incentives*”, National Audit Office of Finland, 192

gross income to arrive at taxable income. The net benefit to be obtained from these allowances depends on the tax rate.

- ii. Tax credits or amounts deducted from tax liability: a lump sum deduction. Their net effect is independent of income level, and is equal for all taxpayers since a certain amount of money or a certain share of payment is deducted from tax payments for all taxpayers, irrespective of the marginal tax rate.
- iii. Tax Rate Reduction: taxing a class of taxpayers or activities at a lower rate (sometimes even at 0 % rate). In some systems, tax relief can be deducted from tax due, whereas in others, it can be deducted from the tax base or taxable income e.g. lower corporate tax rate for high-tech companies in China, or lower income tax rate for foreign researchers in Denmark.
- iv. Tax Exemption (Tax Holiday): particular income is exempted or excluded from the tax base e.g. tax exemptions for R&D centers in Poland.
- v. Tax Deferrals: a specific form of tax incentive, which are reliefs in the form of a delay in payment of a tax e.g. depreciation allowances.

The main type of tax incentives used by Thailand to promote R&D activities are in the form of enhanced R&D expenditure deduction from taxable income, similar to Malaysia, where enhanced tax deduction is selected in preference to tax credit. Nevertheless, even an advanced economy such as Singapore prefers enhanced deduction to tax credit.

### **R&D Tax Incentive in Singapore**

For encouraging R&D activities in its country, Section 14D of Singapore Income Tax Act (SITA) provides that new product and process development costs must be amortized by allowing current deductions for R&D expenditures incurred by a taxpayer in the conduct of its trade or business. Company carrying on business may

enjoy tax deduction, under this Section the deduction is available for expenses on R&D, irrespective of whether done in Singapore or abroad. The tax deduction under section 14D is equal to 100% of the amount of eligible R&D expenditure.

According to section 14DA of ITA, company that incur expenses in respect of R&D activities which are carried out in Singapore will be qualified for an additional deduction of 50% of qualifying expenditures. That mean the 150% tax deduction will be granted to R&D that has been carried out by company itself in Singapore or which has been outsourced to R&D organization in Singapore<sup>13</sup>.

In the year 2010, the government has introduced the Productivity and Innovation Credit (PIC)<sup>14</sup> as a major enhancement to spur a broader range of innovative activities with generous tax benefits.<sup>15</sup> With PIC scheme the Deduction for qualifying R&D will further enhanced to 400 percent on qualifying R&D expenditure according to Section 14DA(2) of SITA. This super deduction is granted on the first S\$400K of qualifying R&D expenditures incurred per year. Exceeding the cap will still enjoy 150% tax deduction if the R&D is done in Singapore. Any other R&D expenditure, done overseas, also still enjoy 100% base tax deduction.

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<sup>13</sup> IRAS e-Tax Guide, "Research and Development Tax Measures (Fourth edition)", 28, See:  
[https://www.iras.gov.sg/irashome/uploadedFiles/IRASHome/e-Tax\\_Guides/etaxguide\\_IIT\\_RnDTaxMeasures\\_2015-01-22.pdf](https://www.iras.gov.sg/irashome/uploadedFiles/IRASHome/e-Tax_Guides/etaxguide_IIT_RnDTaxMeasures_2015-01-22.pdf), September 9, 2015

<sup>14</sup> The Productivity and Innovation Credit (PIC) was introduced in Budget 2010. It provides enhanced deductions of 250 percent cap at S\$300,000 for investments under each of six activities of the innovation chain: automation equipment, training, acquisition and registration of IPRs, R&D and design. For Year of Assessments 2016 to 2018, the expenditure cap for each activity is S\$120,000.

<sup>15</sup> Budget 2010 Key Budget Initiatives 1, "*Raising Productivity: Skills, Innovation And Economic Restructuring*", See:  
[http://www.singaporebudget.gov.sg/budget\\_2010/speech\\_toc/download/FY2010\\_Key\\_Budget\\_Initiatives1.pdf](http://www.singaporebudget.gov.sg/budget_2010/speech_toc/download/FY2010_Key_Budget_Initiatives1.pdf), accessed on September 9, 2015

## **R&D Tax Incentive in Malaysia**

In Malaysia, Companies performing R&D to further its business are allowed to claim 200% deductions for (non-capital) expenditures incurred in qualifying R&D under Section 34A (1) of Malaysian Income Tax Act (MITA). However Approval of research project by the Minister of Finance is required before double deduction is allowed<sup>16</sup>.

In addition, this double deduction is also available for cash contributions or donations made to approved research institutes<sup>17</sup> and payments for the use of the services of approved research companies<sup>18</sup>, contract R&D companies and R&D companies which are revenue in nature subject to Section 34B (1) of MITA.

To qualify for double tax deduction, the research expenditure must first obtain prior approval from the Minister of Finance. The subject of research does not need to be related to the business carried out by the business entity; however, it must be incurred in the basis period.

## **R&D Tax Incentive in Thailand**

For Thailand, in order to promote and encourage the private sector to invest in research and technology development, the Revenue Department has launched two forms of tax incentives to promote R&D since 1996. The first form of incentive is a special initial depreciation on the date of acquisition of the machinery (including all

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<sup>16</sup> ACCA, "Tax incentives for Malaysia as a regional hub and for research and Development," SA Technical, 9 (2011), See: [http://www.accaglobal.com/content/dam/acca/global/pdf/sa\\_nov2011\\_RandD3.pdf](http://www.accaglobal.com/content/dam/acca/global/pdf/sa_nov2011_RandD3.pdf), accessed on September 9, 2015

<sup>17</sup> An approved research institution includes the following: (a) all government research institutions, including institutions corporatized under Section 24 of the Companies Act 1965; (b) government funded universities which undertake research that conform to the definition of R&D as indicated above.

<sup>18</sup> An "approved research company" means a company, other than a company licensed under Section 24 of the Companies Act 1965, approved by the Minister to mainly carry on research in an industry specified in the approval and to commercially exploit the benefit of such research thereof;

related equipment) used in R&D projects at the rate of 40 percent of the total acquisition cost. The second feature is the tax allowance measure which is the main tax incentive in Thailand under the Revenue Code allowing companies and partnerships investing in R&D to deduct a higher amount of expenditures paid for R&D activities from their taxable income. Under the Royal Decree No. 297, the additional deduction is equal to 100% of eligible expenditures incurred on R&D activities, carried out in Thailand, paid out to an approved R&D service provider. However, in 2016, the Royal Decree No. 598 was issued, extending the 200% corporate tax deduction for R&D expenses under Royal Decree No. 297 to also include Innovation expenses paid out for hiring an authorized R&D organization to undertake Innovation activities for the entity. Thus, a new five-years 300% corporate tax incentives for R&D and innovation expenses was introduced.<sup>19</sup> The main features of the incentive include<sup>20</sup>: the exemption of corporate income tax for juristic partnership and companies for expenditures paid for research and development on technology and innovation to public or private organizations as published in the Government Gazette at three times the amount of the expenses paid out as R&D expenditures. However, this amount must not exceed the percentage of gross income in the calculation of net profit before deduction of any expenses in an annual accounting period. A triple deduction is also available, although capped at the following limits calculated based on gross revenue:

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<sup>19</sup> MGR Online, “*Ministry of Science proceeds with 300% tax exemption aiming to increase investment in research*”, **SME News**, March 25, 2016 (ผู้จัดการออนไลน์, “ก.วิทย์ฯ เดินหน้ามาตรการเว้นภาษี 300% เพื่อเพิ่มสัดส่วนทุนวิจัย”, ข่าว SME, March 25, 2016); See: <http://www.manager.co.th/iBizChannel/ViewNews.aspx?NewsID=9590000031049>

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<sup>20</sup> EY Global Tax Alert, “*Thailand Approves increased tax incentive for research and development expenses*”, See: <http://www.ey.com/GL/en/Services/Tax/International-Tax/Alert--Thailand-approves-increased-tax-incentive-for-research-and-development-expenses>, September 9, 2015

Amount of Gross Income	Capped Amount
For gross income not exceeding 50 million baht	60% of the gross income amount
For gross income not exceeding 50 million baht but not exceeding 200 million baht	9% of the gross income amount
For gross income exceeding 200 million baht	6% of the gross income amount

The incentive is effective for eligible R&D expenditures incurred from January 1, 2015 to December 31, 2019.

### **Tax Issues Found in the R&D Tax Incentive Scheme after the Royal Decree 598 has been enacted.**

Considering the contents of Decree No. 598, it can be seen that the Decree has provided additional benefits to those who wish to invest in R&D, where previously investors would receive a tax exemption benefit of twice the amount of income tax; with the newly issued Decree, investors will now be eligible for a triple amount of tax exemption on expenses paid for R&D of technology and innovation. Although the proprietor of the R&D project may apply for tax exemption thrice the amount of the actual expenses paid for R&D of technology and innovation, the exemption amount shall not exceed the cap prescribed for tax exemption. The proprietors will be divided based on business size, which dictates the exemption rate as such: those who have income of not more than 50 Million Baht will be eligible for the tax exemption of the R&D expenses at the maximum rate of 60% of income; those earning a revenue of between 50-200 Million Baht will be eligible for an additional tax exemption of 9% on that portion of revenue, and those earning revenue of more than 200 Million Baht will be eligible for additional tax exemption of 6% for that portion of revenue.<sup>21</sup> The government does not, in any case, grant a benefit of 300% tax exemption to all proprietors. In the case where the company has a low turnover but high costs for R&D,

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<sup>21</sup> Section 5 of the Royal Decree No. 598

the company may be granted a benefit limited by the stipulated cap, or, in the case of a large proprietor with high turnover and high cost of R&D, the benefits derived from investing in R&D will also be restricted. Therefore, it can be summarized that the Decree No. 598 stipulates tax benefits for R&D based on the income level of the company. The purpose of this is to provide equal benefits to all size of businesses, ranging from large enterprise to small and medium enterprise or SME, thereby mitigating the income gap effect. This has been done with no considerations of the actual expenses invested by investors. The amount of benefit received may not be as much compared to the amount invested by the company if the expenses for R&D are disproportionate to the revenue generated by the proprietor.

Another issue that has not yet been resolved by the Decree No. 598 is where the proprietor faces a loss, or where the proprietor's expenses of R&D or innovation is higher than the net income of the same accounting year such expenses are incurred. The company will not be able to deduct the expenses eligible for additional tax deduction from the revenue of company if the total amount is more than the net income for that particular year. This is because the content of the Decree only provides benefits in the form of tax exemptions of the business' net income prior to expenses deduction. Therefore, in the case where the proprietor's income is insufficient to be eligible for the benefit, the proprietor will not be able to fully receive the benefit.

The last issue concerning the definition of R&D, the Notification of MOF on Income Tax (No. 391) by virtue of Section 4 of the Decree under the Revenue Code Regarding the Tax Exemption (No. 598) has provides an additional definition of "Innovation" to encourage private sectors to invest, and create new innovation in order to develop the capability of R&D in Thailand, uplifting the country's ability to compete with current market trends, which are mainly driven by technology and innovation. The Notification of MOF No. 391 provides a clearer and more comprehensive definition of R&D. The definition of 'basic research' remains almost the same as the existing definition (Notification of MOF No. 3). A new

definition has been given to ‘applied research’, where the research is categorized into two types - applied research, and experimental development research. Furthermore, the previous condition stating that “R&D project cannot be modified or applied for industrial or commercial purposes” has been removed. Nonetheless, even though the definition has been improved in terms of clarity and comprehensibility, the definition is still too broad as it does not provide the details of what characteristics are included or excluded to be considered an eligible R&D activity, and hence, the applicants lack a clear guideline on what type of R&D activities would be eligible for the tax incentives.

## **Recommendation**

To be conclusion, The system of R&D tax incentives is one important way of encouraging R&D from research, Although the R&D tax incentive in Thailand seem less effectiveness, this does not imply that the incentive is not desirable. The recommendation is not to abolish the policy but to modify it and improve the existing measures in order to enhance effectiveness.

### **1. Definition**

Although the definition under the Notification of MOF No. 391 has become clearer and more understandable, it is too generally and does not provide the details of what characteristics are to be included or excluded as R&D, and hence, lacking a clear guideline for applicants on what type of activities would qualify for the proposed R&D tax incentives.

Comparing to Singapore and Malaysia’s definition of R&D, it is seen that the definition of R&D defined by these two countries are defined broadly, such as the case in Thailand. However, there has been a clear identification of R&D activities that does not fall under the scope of the general definition at the end of the decree. This allows the readers to be able to interpret the definition of R&D more specifically. Thus, it is suggested that specific details should be provided to define those R&D activities that does not qualify under



the scope of the R&D definition provided at the end of Section 2 in the Notification of MOF no. 391

## **2. Increasing to 200% Exemption**

After the Royal Decree No. 598 has been enacted in 2016, tax incentives have been increased for expenses incurred for research and development (R&D) on technology and innovation. Investors will now be eligible for the tax exemption at a triple amount of the expenses paid for R&D on technology and innovation. But this amount may not exceed the limit caps prescribed for tax exemptions. However, it can be seen that the government does not, in any case, grant a benefit of 300% tax exemption to all investors. In the case where the company has a low turnover but high costs for R&D, the company may be granted a benefit limited by the stipulated cap, or, in the case of a large company with high turnover and high cost of R&D, the benefits derived from investing in R&D will also be restricted. Therefore, it can be summarized that the Decree No. 598 stipulates tax benefits for R&D based on the income level of the company. This has been done without considering the actual expenses that the investors have invested. The amount of benefit received may not be as much as the amount invested by the company if the expenses for R&D are disproportionate to the revenue of the investor.

The author would, thus, like to suggest that the increasing rate of tax exemption should apply to all types of corporations, in particularly the SMEs. The policy should increase the deduction for R&D expenditure to 300%, subjected to a cap of 1-2 million baht in research expenditure per year. Therefore, Section 5 of the Royal Decree No. 598 should be amended to state that Income Tax shall be also exempted under Division 3, Chapter 3, Title 2 of the Revenue Code to any companies or partnerships, for the income of any companies or partnerships amounting to 100% of the expenses incurred in the R&D of technology and innovation from January 1, 2015 to December 31, 2019 for any expenses paid towards R&D on technology and innovation amounting to not more than 2 million baht per annum. This is in addition to the tax exemption on Income Tax as

prescribed under Section 4 for any additional expenses subjected to ordinary tax exemption besides from the additional exemption on Income Tax on R&D expenses in the first portion not exceeding the stated ceiling limit. The policy should also include the option to convert R&D deductions into non-taxable cash grants to ease potential cash-flow problems faced by SMEs.

### **3. Loss-Making Situation**

In the case of a loss-making situation, losses can be carried forward up to five accounting periods under the general provisions of the Revenue Code. As a result, loss-making firms will also enjoy the benefits. However, because of Thailand use an exemption of income method instead of using double deduction on expenses if the R&D expenditures are spent out more net incomes received in the same year. The exempted amount of R&D expenses cannot be deducted exceed the gross amount of incomes. It can be stated that where the investor faces a loss, or where the investor's expenses of R&D or innovation is higher than the net income of the same accounting year such expenses are incurred. The company is still unable to deduct such additional expenses from the revenue of the company more than the net income if the total amount is more than the net income for that particular year.

In order to encourage R&D activities among SMEs or Startups, which are large in number, and at the same time requires the most supportive efforts from the government, amending the tax incentive measure to consider the carrying forward of losses is necessary to encourage these two groups to invest in R&D. This is so that SMEs and Startups can feel that they will receive the full benefit of the tax incentives imposed. Thus, it is recommended that amendments be made to the Revenue Code on Tax Exemption to allow for tax deductions at an amount of more than the actual expenditure amount in place of the tax exemption measure, as is adopted by Singapore and Malaysia.

However, to amend the Revenue Code must obtain approval from the parliament. The process of obtaining approval may take a long time. Therefore, to accelerate and facilitate the process so that

the law will be enacted in accordance with the current situation, the writer would like to suggest that the Revenue Code should be amended in section 3 of the Revenue Code to allow the Revenue Department, to issue a Notification giving a special deduction for expenses paid for R&D other than reduction of tax rate and tax exemption. The Royal Decree should be enacted to give a special deduction for expense paid for R&D. This would be beneficial for the purpose of enacting laws to deduct expenses incurred from other matters which may incur or increase in the future.

#### **4. Establishment of National Research and Development Fund**

To stimulate more R&D investment in the private sector and enhance its effectiveness. Thailand should establish the National Research and Development Centers may be in the form of Fund which was established by the Thai Government as an independent state agency. With it objective to establish a national R&D fund to promote and encourage R&D In Thailand and in the population and to support long-term sustainable investment for any private sector who are interested in R&D activities including to conduct studies and research, or encourage the conduct of the study and research, training or organization of meetings with regard to R&D promotion.

In establishing the aforementioned funds, the Thai Government must issue a Legislative Act to establish the National R&D Fund. Before the enactment of the legislative act, the Government is required to submit a draft to the legislative assembly, where the Government should consider drafting the proposal for the establishment of a National R&D Fund. Once the draft of this Legislative Act concerning the Establishment of the National R&D Fund has received approval from the senate, it shall be published in the Government Gazette and became effective.

#### **5. Tax Incentive for Donor and Researcher**

Thailand should provide special tax incentives for individuals or corporations to donate to R&D institutions already registered under the approval of government agencies such as The Thailand Research Fund, TDRI, NECTEC, etc. The donations or contributions

could be in the form of money or in kind. Special tax incentives maybe given in form of tax allowance or double deduction (tax exemption). However, there should be a ceiling on the deduction or allowance a taxpayer can claim each year, such as the capped ceiling of 10% of taxable income

For any person or partnership engaged in the supply of R&D services are eligible for a tax exemption on 50% of the income earned from research activities. This aim is for trying to get more people to enter the fields of R&D and encouraging the existing researcher to undertake more research since there is a shortage of people to conduct this research in Thailand.

The tax incentive scheme aims to encourage investors or private entities to carry out more R&D activities in order to receive more tax benefits. However, the enactment of this policy may cause the government to lose a significant portion of income from taxes. However, with increasing R&D activities by the private sector will allow the government to indulge in increased tax revenue from other types of income taxes such as the VAT, corporate income tax, and individual income tax derived from the sales of value-added products and services, or from the increase in employment. Research shows that the increase in opportunities derived from increasing R&D activities will allow the government to generate much more revenue than the revenue lost from excising the tax incentive schemes<sup>22</sup>.

The recommendations made on the tax incentive schemes to promote R&D activities on Technology and Innovation are only initial measures to stimulate and support those who are interested in investing on R&D activities. However, the implementation of such schemes to achieve an effective outcome must be derived from the collaboration of all involving parties in order to establish a sustainable development of technology for the country to become on par with other countries in the world's competitive landscape in the future.

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<sup>22</sup> MGR Online, *supra* note 18

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